

12 November 1954

MEMORANDUM FOR: SR DIVISION

ATTENTION :

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SUBJECT : Balloon Overflights--
Stereo Camera Operation

1. The following discussions is a summary of that which has transpired since this feasibility project has been initiated:

a. On 13 August 1954 [redacted], SR Division, contacted the undersigned for assistance on a possible operation in May or June of 1955 which relates to the subject above. The possible operation will be one where the balloon will fly from one friendly territory over a critical target area and then into another friendly territory. This inquiry was not to be considered as a firm requirement but it constituted a request for a feasibility study. Basically, the request pertained to a balloon overflight, in an unspecified location, under which continuous stereo-pair aerial photographs were desired. The height of the flight was to be somewhere between 10,000 and 20,000 feet and the allowable equipment weight can not exceed 75 lbs. This equipment must be carried in a gondola 3' x 4' in which only several cubic feet are available for camera equipment. The estimated velocity of the flight is between 25 and 50 miles per hour and photographic coverage is expected to be necessary for one half to one hour. The unit is to be manually operated and the operator will be in a position to tilt the camera and to take the necessary sequenced photographs. It is our belief that this operator, however, should be provided with suitable additional equipment such as when he is taking the serial photographs, sequenced photographs of an instrument panel indicating altitude, pressure, temperature, etc., should be simultaneously recorded.

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b. It was determined that for sensible photographic interpretation certain factors had yet to be provided. These factors were: (a) Temperature, (b) Target size, (c) Time of day, (d) Deviation of flight path from target axis, (e) Extent of detail desired--to determine scale and focal length. It was agreed that these factors would be provided by [redacted] of SR.

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c. Mr. Arthur Lundahl

c. Mr. Arthur Lundahl, [] was contacted by APD on 16 August 1954 for assistance in this matter, and [] of his office visited APD to discuss the problem. They were to prepare a preliminary report which is attached and which is identified as photographic intelligence memorandum [] GP/I-30 (Project 70.132) dated 20 September 1954.

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d. Later on the undersigned was contacted by [] who indicated that the following detail in the target area was required.

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- 1) Size of runways
- 2) Number and sizes of planes--fighters and bombers
- 3) POL (petroleum oil and lubrication facilities) within four miles either side of the runway

It is noted that since these figures have been provided, if one considers the altitude of the balloon to be approximately four miles that a tilt angle of 45° may be expected since SR is requesting an eight mile coverage. Information was requested on the minimum elevation of the sun for minimum standard photography. This figure would assist in answering many of the other questions which had previously been placed. SR was advised that this angle was approximately 20° .

e. On 11 October 1954 a memorandum was provided by SR which supplied the mean temperature data that was previously requested. This memorandum is attached with the referenced temperature chart.

2. On 22 October 1954 [] telephoned APD and asked that a meeting be set up during the week of 25 October 1954 to see photographs of the proposed cameras and the possible optical system. At this time Mr. Lundahl's group had not had an opportunity to work with the temperature data previously provided by SR, and accordingly it was deemed advisable prior to having a joint meeting to allow them to work with this data. A further inquiry indicated that K-20 cameras, which are the type proposed for this operation, were not immediately available and accordingly have to be requisitioned. Prior to requisitioning these cameras, however, it would be desirable to know whether the initial request received by APD has now passed out of the feasibility stage into a formal request for assistance to the extent that equipment and associated modifications of the balloon gondola is being requested. If a formal request for assistance is in order, two K-20 Aerial Cameras with 6-1/2", 12", and 24" focal length lenses will be requisitioned, for it may be necessary during this overflight operation to provide the operator with a means for rapidly changing from one lens to another. Furthermore, Kodak Aerial Super XX Film and a "Minus Blue Filter" have been recommended as the most suitable recording medium. In addition, it is felt that the camera should be enclosed in an insulating jacket so that it can be warmed with a "pocket hand warmer", and that provisions should be made for simultaneously photographing instruments for recording temperature, altitude, etc., during the flight.

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3. The

3. The requirement to be able to photograph four miles on either side of a target runway seems to be a difficult one, and we wonder if this distance could be limited to any extent in order that it will not be necessary to use two K-20 cameras in the gondola at all times. It is believed that such a requirement would definitely cramp the operator if a normal size gondola is used.

[redacted]
C/TSS/APD

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Attachments:

Memorandum [redacted]

Memorandum fm SR to C/TSS/TO dtd 10/11/54 w/ chart

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Distribution:

Addressee - Orig. & 1 w/atts

TSS/SRB - 1

TSS/APD - 2

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